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# 4. *Preliminary Alternatives*

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The process involved in fulfilling the requirements of the National Environmental Protection Act (NEPA) and other federal laws and regulations requires a broad look at alternatives. The previous chapter discussed a number of roadway types that might be employed in the M-15 corridor to accommodate future travel demand.

## 4.1 Do-Nothing Alternative

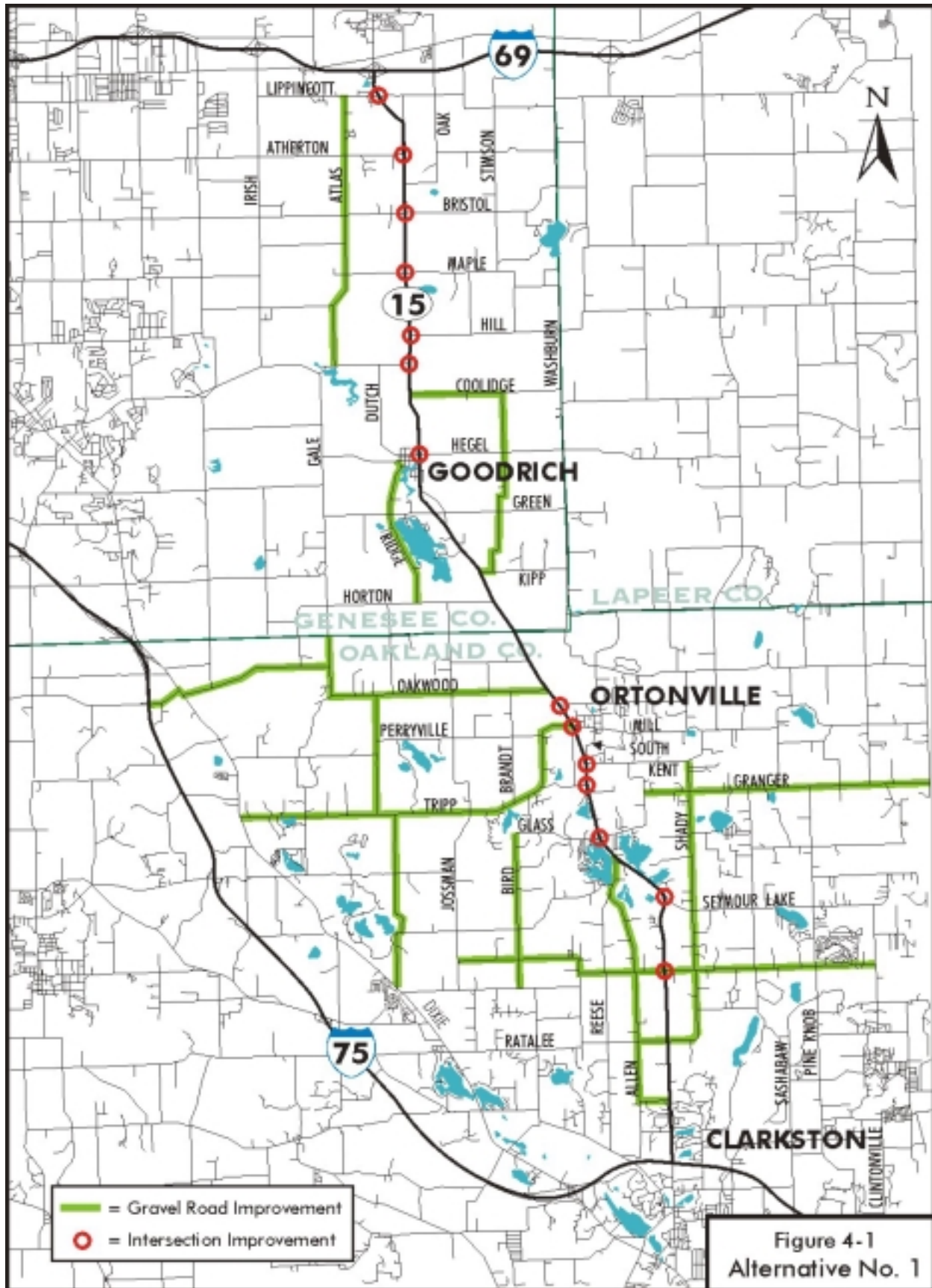
A “do nothing” or “no build” alternative will be considered throughout the course of the environmental analysis. Making no improvements to M-15, beyond the current repaving now underway, will remain an option through the public hearing stage of the project.

## 4.2 Mass Transit Alternative

Mass transit must be considered in all federally-funded projects that address substantial improvements to the transportation network. In this case, mass transit has been considered from the standpoint of the maximum potential diversion from personal vehicles that might be achieved. This was done by examining the mode split (the percentage of people using transit versus personal auto transportation) in similar areas. This examination led to a conclusion that even under the most favorable conditions, it is unlikely that more than 5 percent of the travel on M-15 could ever be diverted from the auto. Preliminary travel demand estimates indicate a need for four lanes in the year 2025. A 5 percent diversion would not affect this laneage requirement. Therefore, the non-auto alternative is not considered a viable option to addressing the travel demand issues of the corridor and will not be the focus of additional analysis.

## 4.3 Low Cost Improvements/TSM - Alternative No. 1

Low-cost improvements need to be considered as an alternative to widening the roadway for its entire 20-mile length. Low-cost improvements include transportation systems management (TSM) techniques that are designed to maximize the use of the existing transportation system. A number of options are proposed under this umbrella of low cost improvements and each is discussed below. Together they comprise Alternative No. 1 (Figure 4-1).



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## Pave Gravel Roads

Many of the roads in Oakland and Genesee Counties are gravel. They generally serve low traffic volumes at low speeds. Paving these roads would substantially increase their capacity and their usefulness. In this role, they would provide relief to M-15.

## Upgrade Intersections

Intersections invariably involve interaction of crossing/turning vehicles. These movements are controlled by stop signs or signals that bring traffic to a halt. Conflicts can be reduced by removing turning vehicles from the through travel lanes. This means adding left-turn and right-turn lanes on the near sides of intersections and return tapers on the far sides to allow vehicles turning from side roads to enter the traffic stream more smoothly.

Oakland County has aggressively pursued the implementation of a FAST-TRAC (Faster And Safer Travel through Traffic Routing and Advanced Controls) system. It includes optical sensors that count traffic at each approach of the intersection through each signal cycle. The system reallocates green time to the approaches that have the highest counts. This effectively adjusts the green time available to match the travel demand from the heaviest approach in a dynamic way. The result is improved travel flow and a signal that is more responsive to the varieties of travel demand over time. The FAST-TRAC system is particularly effective where signals are isolated from one another. Where intersections are close together the benefits of FAST-TRAC are lesser and the benefits of signal coordination (linking signals) are greater.

## Roundabouts

Roundabouts are an innovative solution in America that allow the continuous flow of traffic at intersecting roads. Three key features of modern roundabouts that set them apart from earlier traffic circle configurations are: 1) approaching traffic enters the traffic circle at an angle; 2) entries to the circle flare to multiple lanes; and, 3) traffic on the approaches always yields to traffic within the circle. Roundabouts have had success in Europe in reducing the severity of accidents as well as certain accident types, while maintaining a steady traffic flow. Under the appropriate circumstances, where right-of-way is available at an intersection, roundabouts may prove to be a potential solution in the M-15 corridor.

## Incident Management

Incident management means increasing response rates to incidents (accidents, spills, fires, and the like) and moving vehicles out of the traffic stream as quickly as possible. The primary focus of incident management is in freeway situations, but the principle applies to other roadways. Incident management will be carried through the environmental document. And, while it does not increase capacity from the standpoint of base infrastructure, it is a means of making the best use of the capacity that exists.

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## Access Management

In recent years, the Michigan Department of Transportation has developed guidance with respect to access management and driveway control. The goal is to reduce friction on the mainline roadway and minimize conflicts that lead to accidents and delay. Access management involves observing recommended driveway spacings based on roadway speeds; encouraging shared driveways by adjacent owners; providing access from side streets; providing, in some cases, frontage roads or service drives; and, seeking other innovative ways to minimize direct conflict with through traffic. Access management will be an important component of any improvements made in the M-15 corridor.

## Telecommuting/Demand Management

It is evident that under the right circumstances, individuals are no longer commuting to work on a daily basis, but are instead working at home via electronic means. Interestingly, analysis of this trend finds that travel reduction is not as great as one might expect. In fact, the need for individuals to be in the workplace on a regular basis seems to counterbalance the advantages gained by telecommuting such that travel, overall, is not reduced significantly. This pattern could change in the future but at the present time, telecommuting is not seen as a panacea in terms of the need for additional roadway capacity.

Demand management is a partner to telecommuting in the sense that it is an attempt to reduce travel. Demand management generally takes the form of actions by large employers, which may set up ridesharing programs, provide four-day workweeks, or allow travel during off-peak times to reduce the peaking characteristics associated with work travel.

In the end, neither telecommuting nor demand management is expected to influence travel forecast in the M-15 corridor in such a way that the laneage needs evidenced by travel projections are reduced.

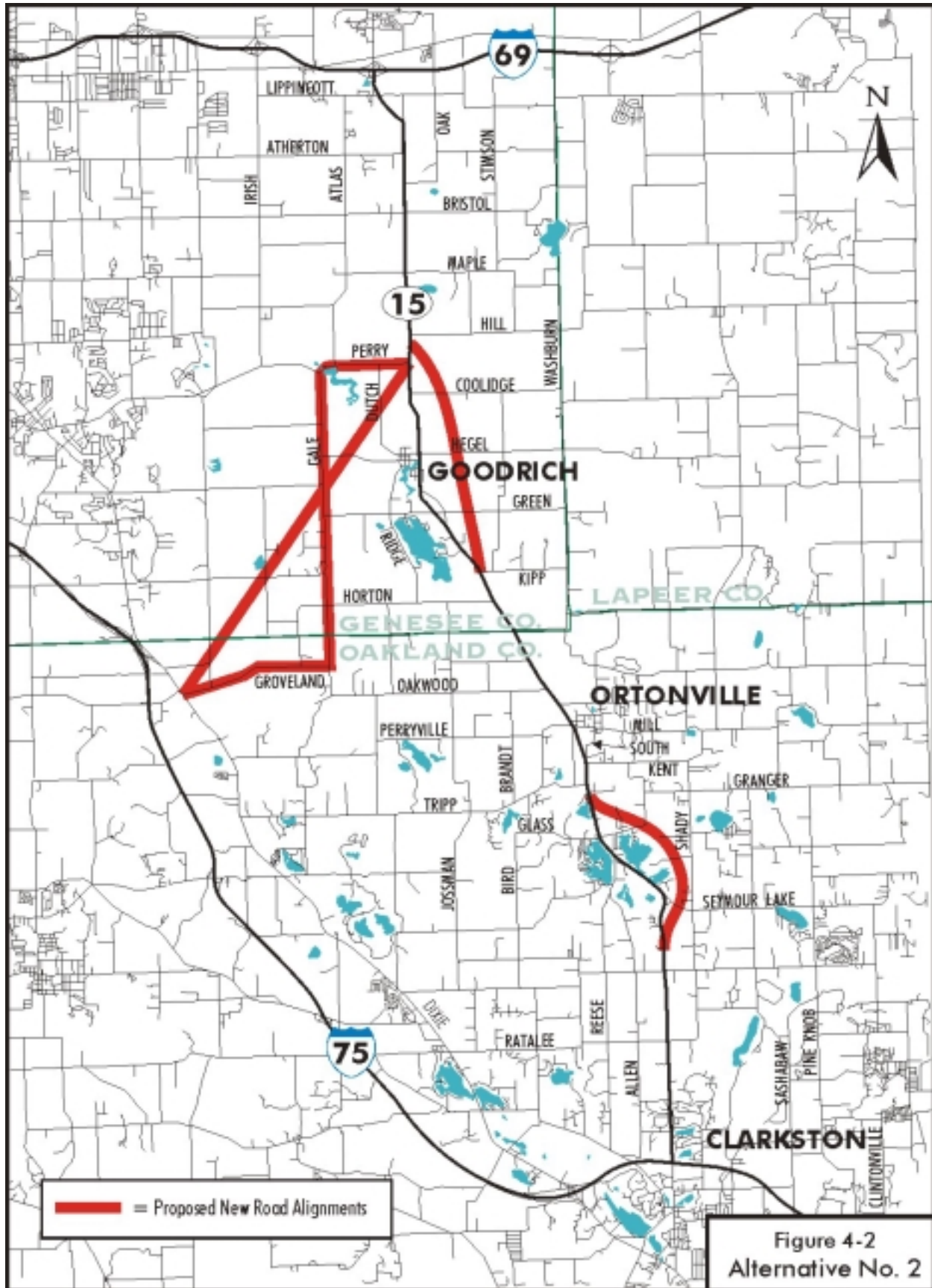
## 4.4 New Alignments - Alternative No. 2

Several roads on new alignment will be considered to provide relief to M-15 and to provide better truck movement in the corridor.

The first alignment would use existing roads to connect M-15 north of Goodrich to the Dixie Highway/I-75 area just south of the Oakland/Genesee county line (Figure 4-2). From north of Goodrich, this alignment would follow Perry Road west to the community of Atlas, then south via Gale Road to Groveland Road. Groveland Road would carry traffic west to Dixie Highway and the nearby interchange with I-75.

An alternative to this use of existing roads would be to follow a diagonal alignment from the general vicinity of Perry Road and M-15 south and west, cross-country, to Dixie Highway at its interchange with I-75.

Finally, two new bypasses are considered as options: one on the east side of Goodrich and the second on the east side of Huff Lake and Lake Louise.



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## 4.5 M-15 Reconstruction - Alternative No. 3

Chapter 3 of this report reviewed a number of roadway types that may have application to the reconstruction of M-15. Some of the roadway types have been examined and found not to be feasible while others are offered as viable Illustrative Alternatives. Each of these is discussed below.

### Super-2

Travel demand indicates the need for four lanes through the corridor. As a consequence, the Super-2 type of roadway is not considered a viable option for M-15 reconstruction.

### Four-lane Road

Four lanes can serve through travel adequately; however, in many locations, due to the numbers of driveways, left turns are common. Four lanes simply do not have the capacity when turning movements are considered. The left-turn movement blocks the through-travel lane. The number of driveways all along M-15 suggests that having a continuous left-turn lane (i.e., a fifth lane) is a more desirable configuration.

### Three-lane Road

Three-lane roads are designed to provide one lane of travel in each direction unobstructed by left turns, which occur from a center turn lane. Travel demand has indicated the need for at least a four-lane section with two lanes in each direction for through travel. Therefore, the three-lane alternative is not considered a viable alternative.

### Five-lane Roadway

A five-lane roadway can be constructed in either an urban or rural cross-section type. The difference is drainage and sometimes amenities in the form of sidewalks or walkways/bicycle paths. The five-lane urban section is compact, with curb-and-gutter drainage, and requires a minimum of right-of-way. Where more right-of-way is available, the rural section allows for sideslope drainage to a ditch. In either case, the outside lane can be widened to allow for bicycle travel concurrent with vehicular travel on the roadway. The five-lane section would be augmented at intersections by exclusive left-turn and right-turn lanes. In addition, on the far sides of intersections, there may be a taper lane that allows right-turning vehicles from the cross road to return smoothly to the two-lane traffic flow. Travel demand projections at this point do not indicate any locations where more than five lanes would be required.

### Narrow Boulevard

A narrow boulevard provides a more aesthetic treatment than an “all concrete” five lane road for managing two through lanes of travel in each direction. The median acts as a separator between the two travel directions, improving safety. Narrow boulevards are less favored in terms of geometrics because the narrower median offers a greater challenge for providing U-turn movements. The U-turns are necessitated because many cross streets and driveways will not have median openings. For many adjacent land uses, there will be only “right turns in” and “right turns out” of the property. Left turns would be accomplished by a right turn from

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the cross street/driveway into traffic flow and then a subsequent U-turn. The U-turn can only occur where the median is of adequate width. In the M-15 corridor a narrow boulevard is an option, with adequate U-turn movements provided for at selected locations. This alternative will likely have fewer impacts because it is limited in its right-of-way requirements.

## Wide Boulevard

A wide boulevard provides a full-width median to allow storage of large vehicles and U-turn capabilities along the entire road.

## One-way Pair

Consideration is being given to formation of a one-way pair in the Village of Goodrich (Figure 4-3). The existing roadway would serve as the southbound element of the one-way pair. The northbound element of the pair would take off from the existing curve in M-15 south of Goodrich (at the point where M-15 transitions from a northwest-southeast orientation to a north-south orientation). The northbound road would proceed across Kearsley Creek, then north to the east of Putnam and to the west of the new subdivision whose principal roads are Rose Lane and Fox Hollow. It would cross East Hegel and transition back to M-15 south of the Bank One property. The new roadway would pass through a vacant area that has been proposed for a senior center, presumably associated with Goodrich United Methodist Church, which fronts onto M-15 just south of East Hegel. Advantages to such an approach may be fewer takings of structures along M-15 and reinstitution of on-street parking on the southbound leg of M-15 as it passes through the commercial district of Goodrich.

